Laparoscopic neurolysis for deep endometriosis infiltrating pelvic wall and somatic nerves: a prospective cohort study on 402 patients

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Introduction: This study aimed to review efficacy and feasibility of laparoscopic decompression and neurolysis for endometriosis involving sacral plexus and/or somatic nerves causing somatic compression and ano-genital pain on a large case series.

Materials, methods and patients: Prospective case-series, single-centre, single-surgeon study on 402 patients.

Setting: Department of Obstetrics and Gynecology, Gynecologic Oncology and Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital, Verona - Italy

In a 9-year period, 402 consecutive patients with deep infiltrating endometriosis complaining of recurrent sciatica and ano-genital pain in addition to common endometriosis symptoms and surgical indications were treated by laparoscopic decompression or neurolysis of sacral roots and somatic nerves. The median follow up was 44.3 months.

Interventions: All the procedures were performed by a gynecologic pelvic surgeon skilled in neuro-anatomy (M.C.)

Exposition, decompression and neurolysis of the involved neural structures was achieved by means of a tranperitoneal medial approach from the Okabayashi’s medial pararectal spaces, by means of a lateral approach from the ileolumbar space, or with both the approaches in a combined technique. Nerve sparing radical excision of deep infiltrating endometriosis was performed laparoscopically in all cases.

Results: In 258 patients (64.1%) a bowel resection was performed to obtain a radical treatment on nodules involving the ileum, sigma or rectum. In all of the 402 patients a laparoscopic evidence of nervous compression of somatic structures and infiltration of their fascial envelope was shown, whereas in 89 patients (22.1%) the same structures were deeply infiltrated, towards the assonal and peri-neural planes. In all of the patients a surgical whole decompression and partial neurolysis of nervous structures was performed, where in 89 (22.1 %) cases a complete neurolysis was required. Complete relief from neurologic symptoms was achieved in all patients at 6 month after surgery, whereas post-operative neuritis was reported in 78 patients (19.4%) and successfully treated with steroids or/and anti-epileptic and opioids drugs.

Conclusion: Pelvic wall spread of deep infiltrating endometriosis might be more usual than thought. Laparoscopic retroperitoneal nerve-sparing approach to endometriosis extending to the pelvic wall with somatic nerve compression proved to be a feasible and safe procedure, effective in pain relief, recovery of impaired neurological functions and neuromotoric impairment symptoms of the pelvis and the leg. It should be limited to referral laparoscopic centres lead by surgical neuro-anatomy skilled surgeons.

Key words : endometriosis, sciatica, ano-genital pain, somatic nerves, neurolysis

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